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AMENDMENTS TO DRAWING FIGURES

Figs. 1A, 1B and 2 have been amended to include "prior art" labels as requested in the Office Action. Replacement and marked-up (annotated) sheets are attached.

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REMARKS

Status of the Claims

Claims 1-33 are pending herein.

Support for the amendment to claim 26 can be found, for example, in original claim 2.

Support for new claim 33 can be found, for example, in original claims 1, 2 and 10 as well as in paragraphs 0023 and 0026 of the present specification. Hence, no new matter is added.

Objection to the Drawings

The drawings are objected to because they fail to show the "prior art" labels for Figs. 1A, 1B and 2 as described in the specification. Figs. 1 A, 1B and 2 have been amended to include "prior art" labels as requested. Replacement and marked-up (annotated) sheets are attached. Accordingly, reconsideration and withdrawal of the objection to the drawings are requested.

Claim Rejection Under 35 U.S.C. §102--Heeks

Various claims are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent 5,965,901 to Heeks et al. (Heeks). Applicant respectfully traverses this rejection and its supporting remarks.

For example, there are two independent claims involved in the above rejection, claim 1 and claim 26.

Claim 1 is directed to an organic light emitting device structure that comprises the following elements: (a) a substrate; (b) a first electrode disposed over said substrate; (c) a polymeric layer comprising a conductive polymer disposed over said first electrode; (d) an organic region consisting essentially of a small molecule material disposed over and in direct contact with said polymeric layer; (e) a second electrode disposed over said organic region; and (f) a thin film encapsulation region disposed over said second electrode.

Claim 26 is directed to a flexible organic light emitting device comprising (a) a polymer layer comprising a hole injecting conductive polymer and (b) a small molecule layer comprising a small molecule emissive material.

As pointed out in the Office Action, and with reference to Fig. 2, Heeks describes a light-emitting polymer device having a glass sheet 1 which carries an ITO anode layer 2 for injecting positive charge carriers, a first organic layer 3 formed of polystyrene sulphonic acid doped polyethylene dioxythiophene ("PEDT/PSS"), a second organic layer 4, formed of PPV (which is an organic light-emitting polymer film, and which acts as a light emitting layer), and a cathode 5 formed of an alloy of aluminum and lithium for injecting negative charge carriers, which device is encapsulated in glass epoxy (not shown).

Heeks is deficient as a reference with respect to claim 1, for example, at least in that it does not teach or suggest an organic region consisting essentially of small molecule material disposed over and in direct contact with a polymeric layer comprising a conductive polymer. In fact, Heeks utilizes an organic light-emitting polymer film.

Similarly, Heeks is deficient as a reference vis-à-vis claim 26, for example, at least in that it does not teach or suggest a small molecule layer comprising a small molecule emissive material, but rather teaches an organic light-emitting polymer film.

In view of the above, it is respectfully submitted that independent claims 1 and 26, as well all claims depending therefrom, are not anticipated by Heeks.

For at least the above reasons, reconsideration and withdrawal of the rejection of various claims under 35 U.S.C. § 102(b) as being anticipated by Heeks are respectfully requested.

Claim Rejection Under 35 U.S.C. §102—Araki

Various claims are also rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent 6,621,840 to Araki (Araki). Applicant respectfully traverses this rejection and its supporting remarks.

With reference to the drawing, Araki describes an OLED device comprising a substrate 1, a multi-layered thin film 2, which has a particular light reflectivity that scarcely causes multi mode resonance (see, e.g., col. 1, lines 51-56), a transparent electrode 3, an organic light-emitting layer 4, and a back electrode 5. As pointed out in the Office Action, Araki at col. 4, lines 15-17, states that "an electrically conductive polymer layer may be disposed on the organic light-emitting layer side surface of the transparent electrode."

With respect to the light-emitting materials for the organic light-emitting layer, these are said not to be particularly limited, and any materials that can be excited to emit fluorescence or phosphorescence may be used. See col. 5, line 54 through col. 6, line 57. Among the materials preferred by Araki are light emitting polymers. See col. 6, lines 19-20. In this regard, note that Heeks above is directed to an organic light-emitting polymer film, specifically PPV.

According to Araki at col. 7 lines 30 et seq., it is preferable that the outside of the organic light-emitting device is sealed by a co-called "sealant" of glass or a polychlorotrifluoroethylene sheet. A desiccating agent, a water repellent fluorine-based inert liquid, and so forth, may be interposed between the organic light-emitting device and the sealant (i.e., between the OLED and the sheet of glass or polymer).

Araki is deficient as a reference with respect to claim 1, for example, at least in that it does not teach or suggest the use of a thin film encapsulation region to protect the OLED from harmful species found in the surrounding atmosphere, but rather teaches, the use of glass and polymer sheets for this purpose.

In this regard, the present inventors have found, for example, that by providing an intervening conductive polymer layer between an electrode layer and an overlying organic small-molecule layer in a device having a thin film encapsulation region, display damage associated with the formation of encapsulated organic displays is minimized or eliminated, thereby significantly increasing product yield. See, e.g., paragraph 0059 of the present specification.

Claim 26 is directed to a flexible organic light emitting device comprising: (a) a polymer layer comprising a hole injecting conductive polymer and (b) a small molecule layer comprising a small molecule emissive material. Araki is deficient as a reference with respect to claim 26, for example, at least in that the concept of a flexible OLED is not disclosed by Araki, nor would one of ordinary skill in the art be motivated by the teachings of Araki to produce a flexible device.

Hence, it is respectfully submitted that independent claims 1 and 26, as well all claims depending therefrom, are not anticipated Araki.

For at least the above reasons, reconsideration and withdrawal of the rejection of various claims under 35 U.S.C. § 102(e) as being anticipated by Araki are respectfully requested.

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Claim Rejections under 35 U.S.C. § 103(a)

Various claims are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heeks in view of U.S. Pat. Pub. 2003/0085652 to Weaver (Weaver). Various claims are also rejected under 35 U.S.C. § 103(a) as being unpatentable over Heeks in view of U.S. Patent No. 6,528,188 to Suzuki et al. (Suzuki). These rejections and their supporting remarks are traversed.

For example, as noted above, Heeks is deficient as a reference with respect to claim 1, at least in that it does not teach or suggest an organic region consisting essentially of small molecule material disposed over and in direct contact with a polymeric layer comprising a conductive polymer, but rather teaches an organic light-emitting polymer film. Similarly, Heeks is deficient as a reference vis-à-vis claim 26 at least in that it does not teach or suggest a small molecule layer comprising a small molecule emissive material, but, again, teaches an organic light-emitting polymer film.

Neither Weaver nor Suzuki makes up for these deficiencies in Heeks.

For at least the above reasons, it is respectfully submitted that claim 1 and claim 26 (as well as all claims depending therefrom) are patentable over Heeks, Weaver and Suzuki.

For at least the above reasons, reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 103(a) are respectfully requested.

CONCLUSION

Applicant submits that all claims are in condition for allowance, early notification of which is earnestly solicited. Should the Examiner be of the view that an interview would expedite consideration of this Amendment or of the application at large, request is made that the Examiner telephone the Applicant's attorney at (703) 433-0510 in order that any outstanding issues be resolved.

FEES

If there are any fees due and owing in respect to this amendment, the Examiner is authorized to charge such fees to deposit account number 50-1047.

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Respectfully submitted,

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I hereby certify that this document and any document referenced herein is being sent to the United States Patent and Trademark office via Facsimile to: 703-872-9306 on May 6, 2005.

David B. Bonham
(Printed Name of Person Mailing Correspondence)

(Signature)